REMARKS

In the Office Action dated April 4, 2005, claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Höht in view of Mitchell. Applicants note with appreciation that claims 3-6 were allowed.

The rejection of claims 1 and 2 is respectfully traversed for the following reasons.

The "reference thermometer" set forth in claim 1 was intended to refer to a non-resistive reference thermometer, and claim 1 has been amended to explicitly use the term "non-resistive reference thermometer." This is supported in the specification as originally filed at page 4, in the first sentence of the third paragraph following the heading "DESCRIPTION OF THE PREFERRED EMBODIMENTS". At that location, it is stated that the reference thermometer 12 is a known thermo-element. An excerpt from the McGraw-Hill Dictionary of Electronics and Computer Technology (1984) is attached hereto, wherein the term "thermo-element" is defined by reference to "thermo converter," and the term "thermo converter" is defined as a device that converts heat energy directly into electrical energy. Amending claim 1 to use the term "non-resistive reference thermometer" is intended to preclude that claim element from being broadly interpreted as possibly encompassing a temperature sensor of the type making use of a resistance element, as is formed by the components 6 and 10 in the present application, and as is disclosed in the Höht reference.

As described in the first full paragraph at page 2 of the present specification, a conventional calibration procedure for a temperature sensor making use of a resistance element requires a certain amount of time, because the resistance

element and the reference thermometer (of whatever type) must be allowed to come into thermal equilibrium before each calibration point is recorded. This is confirmed in the Höht reference, at column 2, lines 52-56, wherein it is stated that a certain length of time is required for the sensing element 1 to heat up to its normal operating temperature and become stabilized at that temperature.

As explained at page 2 of the present specification, in the third paragraph following heading "SUMMARY OF THE INVENTION," this problem associated with conventional calibration of resistance-type temperature sensors is avoided in accordance with the principles of the present invention by obtaining a first reference temperature value at a first temperature calibration point, and obtaining an acoustic velocity-related measurement, for generating a second reference temperature value as a second temperature calibration point, so that the system needs to be in equilibrium only when establishing the first temperature calibration point. The second temperature calibration point can be obtained at a different point in time, and therefore the duration of the overall calibration procedure is reduced.

The Examiner characterized the Höht reference as teaching a calibration apparatus for a resistance thermometer. Although the resistance thermometer in the Höht reference can be calibrated, by the adjustable resistance 2, there is no separate temperature sensor, in addition to the resistance wire, that is used in the Höht reference for such calibration purposes. The only mention of the calibration by adjustment of the resistance 2 in the Höht reference is at column 2, lines 29-32. Clearly this adjustment of the adjustable resister 2 is not "automatic" and it must be assumed to be manual. In any event, there clearly is no electronic circuitry or other

means disclosed in the Höht reference that would "automatically" calibrate the circuit disclosed in the Höht reference.

In the Mitchell reference, a bimetallic coil is used to change the position of a target 20 dependent on the temperature of a liquid in which the bimetallic coil and the target are disposed. The expansion and contraction of the bimetallic coil changes the distance of the target 20 from an acoustic source 14, and therefore the transit time to and from the acoustic source and the target can be measured, and will vary dependent on the temperature of the liquid. In order to make such a calculation, however, the speed of sound in the particular liquid must be known, and for this purpose a stationary target 46 is employed, that is mounted in the wall of the receptacle that contains the liquid. This stationary target 46, therefore, is *not* used to obtain a separate temperature measurement, but is only used to determine the speed of sound in the liquid whose temperature is to be measured, and then this speed of sound is used in the (one and only) temperature measurement that is made, using the movable target 20.

Therefore, neither the Höht nor the Mitchell reference discloses or suggests the use of two different temperature sensors, one of which is a non-resistive temperature sensor, for generating two calibration values at two different temperatures, as set forth in independent claim 1. The most that can be said of the Höht and Mitchell references is that, if they were combined, one temperature measurement could be made using a resistance sensor and another temperature measurement could be made using the acoustic sensor, with the resistance sensor being calibrated using the adjustable resistor 2 and the acoustic temperature measurement being made based on the speed of sound measured using the

stationary target 46 of Mitchell. Even if these two different types of temperature sensors were combined, there is no teaching in either of those references that calibration measurements could or should be made at different temperatures, and there is no teaching in either of these references that would shorten the length of the calibration time needed to obtain two calibration temperature values for calibrating a resistance sensor of the type described in the Höht reference.

Therefore, Applicants respectfully submit that neither of the above references provides a solution to the problem to which the subject matter of claim 1 is directed, and even if those references were combined (for reasons unknown to the present Applicants) the subject matter of claim 1 still would not result.

Claim 2 adds further structure to the non obvious combination of claim 1, and is patentable under the provisions of 35 U.S.C. § 103(a) for the same reasons discussed above in connection with claim 1.

Claims 1 and 2 of the application are therefore submitted to be in condition for allowance. In view of the indicated allowability of claims 3-6, all claims of the application are submitted to be in condition for allowance. Early reconsideration of the application is therefore respectfully requested.

Submitted by,

Steven H. Noll (Reg. 28,982)

SCHIFF, HARDIN LLP
CUSTOMER NO. 26574
Patent Department
6600 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606
Telephone: 312/258-5790
Attorneys for Applicants.

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